

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference 1037-151PCT	FOR FURTHER ACTION		See item 4 below
International application No. PCT/CA2006/000502	International filing date (day/month/year) 06 April 2006 (06.04.2006)	Priority date (day/month/year) 06 April 2005 (06.04.2005)	
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237			
Applicant TIR SYSTEMS LTD.			

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).
2. This REPORT consists of a total of 7 sheets, including this cover sheet.
- In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.
3. This report contains indications relating to the following items:
- | | | |
|-------------------------------------|--------------|---|
| <input checked="" type="checkbox"/> | Box No. I | Basis of the report |
| <input type="checkbox"/> | Box No. II | Priority |
| <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> | Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> | Box No. VI | Certain documents cited |
| <input checked="" type="checkbox"/> | Box No. VII | Certain defects in the international application |
| <input checked="" type="checkbox"/> | Box No. VIII | Certain observations on the international application |
4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).

	Date of issuance of this report 09 October 2007 (09.10.2007)
The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. +41 22 338 82 70	Authorized officer Athina Nickitas-Etienne e-mail: pt04.pct@wipo.int

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:
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PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY
(PCT Rule 43bis.1)

Date of mailing (day/month/year)	31 July 2006 (31-07-2006)
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Applicant's or agent's file reference 1037-151PCT	FOR FURTHER ACTION See paragraph 2 below
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International application No. PCT/CA2006/000502	International filing date (day/month/year) 06 April 2006 (06-04-2006)	Priority date (day/month/year) 06 April 2005 (06-04-2005)
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International Patent Classification (IPC) or both national classification and IPC IPC: F21V 13/00 (2006.01), F21V 7/04 (2006.01), H01L 33/00 (2006.01)		
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Applicant TIR SYSTEMS LTD. ET AL
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1. This opinion contains indications relating to the following items :

- | | |
|--|--|
| <input checked="" type="checkbox"/> Box No. I | Basis of the opinion |
| <input type="checkbox"/> Box No. II | Priority |
| <input type="checkbox"/> Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> Box No. V | Reasoned statement under Rule 43bis.1(a)(I) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> Box No. VI | Certain documents cited |
| <input checked="" type="checkbox"/> Box No. VII | Certain defects in the international application |
| <input checked="" type="checkbox"/> Box No. VIII | Certain observations on the international application |

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/CA Canadian Intellectual Property Office Place du Portage I, C114 - 1st Floor, Box PCT 50 Victoria Street Gatineau, Quebec K1A 0C9 Facsimile No.: 001(819)953-2476	Date of completion of this opinion 19 July 2006 (19-07-2006)	Authorized officer Malgorzata Samborski (819) 956-0759
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WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

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PCT/CA2006/000502

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of:

the international application in the language in which it was filed

a translation of the international application into _____, which is the language of a
translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

a sequence listing

table(s) related to the sequence listing

b. format of material

on paper

in electronic form

c. time of filing/furnishing

contained in the international application as filed.

filed together with the international application in electronic form

furnished subsequently to this Authority for the purposes of search.

3 In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statement that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

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Box No. V **Reasoned statement under Rule 43bis.1(a)(I) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Claims <u>7- 10, 12, 18 and 20 - 22</u>	YES
	Claims <u>1 - 6, 11, 13 - 17, and 19</u>	NO
Inventive step (IS)	Claims <u>9, 12 and 18</u>	YES
	Claims <u>1 - 8, 10, 11, 13 - 17, and 19 - 22</u>	NO
Industrial applicability (IA)	Claims <u>1 - 22</u>	YES
	Claims <u>NONE</u>	NO

2. Citations and explanations :

D1 US 5758951 B (HAITZ, R.H.) 02 June 1998 (02-06-1998)

D2 GB 2365112 A (BIGLIATI, C. et al.) 13 February 2002 (13-02-2002)

Document **D1** (HAITZ, R.Z.) discloses a lighting module comprising: two or more light emitting element emitting a white, blue, and red light and positioned into a closely packed array, a primary optical system with means for light extraction, and a secondary optical system for mixing and collimating the extracted light and connected to said primary system. The spacing between two light emitting elements is less than a half of the longest dimension of light emitting elements. Both optical elements are a beam shaping elements. The axial cross sectional shape flares at an exit aperture.

Document **D2** (BIGLIATI, C. at al.) disclose a lighting module with light emitting elements, wherein a primary optical system is formed from an encapsulated material.

NOVELTY:

Claims 7 to 10, 12, 18, and 20 to 22 are novel and do comply with **Article 33(2) of the PCT**. None of the prior art documents discloses a lighting module with light emitting elements positioned into closely packed array and including two optical systems, wherein a primary optical system is formed from encapsulation material, and a secondary one includes a diffusive optical element and a light pipe or light guide.

Claims 1 to 6, 11, 13 to 17 and 19 are not novel and do not comply with **Article 33(2) of the PCT**. Document **D1** disclosed the claimed subject matter before the claim date.

INVENTIVE STEP:

Given the above objection, claims 1 to 6, 11, 13 to 17, and 19 are also considered to lack an inventive step in light of the described prior art and thus fail to comply with **Article 33(3) of the PCT**.

Claims 7, 8, and 10 do not comply with **Article 33(3) of the PCT**. The subject matter of these claims would have been obvious to a person skilled in the art or science to which they pertain, having regard to **D1** in view of **D2** would have been obvious to a person skilled in the art to improve the lighting module of (**D1**) by applying a commonly known solution shown by **D2**

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted :

The drawings in the application do not comply with **PCT Rule 11.13 (e)**. All numbers, letters, and reference lines appearing on the drawings shall be simple and clear.

The drawings in the application do not comply with **PCT Rule 11.13 (f)**. All lines in the drawings shall be drawn with the aid of a drafting instruments.

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Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question

Claims 9 and 13 do not comply with PCT Article 6.

The expression “ positioned between the two more...” (claim 9) is ambiguous in meaning and scope.

The second introduction (use of an indefinite article) of an element already introduced causes ambiguity. The term “a reflective element” (claim 13) has been defined previously in the claims. The aforementioned term should therefore be referred to using a definite article.

The description does not comply with PCT Article 6. A statement , such as found on page 31, paragraph 00154, which implies that the protection sought may be extended to cover the “spirit” of the invention, should be removed.

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation **Box V**

Claims 20 to 22 do not comply with **Article 33(3) of the PCT**. The subject matter described and claimed in this application, of these claims would have been obvious to a person skilled in the art or science to which they pertain, having regard to **D1** in view of common knowledge. Multiplying optical systems is a commonly known practice in the art of lighting and adding just additional one cannot be considered inventive.

Claims 9, 12, and 18 do comply with **Article 33(3) of the PCT**. The subject matter of these claims is considered to involve an inventive step since the prior art does not fairly suggest a lighting module with light emitting elements positioned into closely packed array with a primary optical system further comprising an encapsulation material positioned between the two light emitting elements and with a secondary optical system including a light pipe or a light guide.

INDUSTRIAL APPLICABILITY:

The subject matter of claims 1 to 22 is considered to be industrially applicable and thus complies with the requirements **Article 33(4) of the PCT**.